Response to Comments
Beaumont-Port Arthur Rate of Progress SIP

EPA commented that, although the proposal states that the required contingency reductions have been met, Table 4-5 reflects that these contingency reductions have not yet been met. EPA further commented that the table does not appear to take credit for any stationary source controls, and that the proposed ROP plan appears to take credit for reformulated gasoline, the Texas low-emission diesel fuel state rule, and I/M, programs that are not implemented in BPA. EPA stated that documentation must be provided describing how the contingency reductions were calculated, and the 3% requirement for the three ROP target years must be met.

Text has been added to the BPA ROP SIP to describe the methods used to calculate the contingency reduction estimates. The inclusion of reformulated gasoline, I/M and TxLED were typographical errors. These programs were not used to calculate contingency emission reductions. The text of the SIP has been corrected to reflect the correct list of control measures.

EPA commented that the new methodologies used to recalculate area source emissions, studies and surveys for commercial vessels and locomotives, and "Bottom-up" surveys used for categories such as graphic arts, forest fires, and oil and gas production, must be documented.

An appendix has been added to the ROP SIP, Appendix 6, "Documentation of Area Source Emission Inventory Improvements." This appendix documents the area source inventory updates since the last approved ROP SIP.

EPA commented that the non-road NOx emissions in Table 4.3 are quite different than the NOx emissions in Data Entry Sheet 1 in the Appendix (20.63 tons/day vs 9.64 tons/day), and that because of the substantial nature of the change it needs to be further explained.

There was a data transcription error in the SIP. The value in both instances should be 20.63, and the SIP has been updated to correct for the error. Additionally, an appendix has been added to the ROP SIP, Appendix 7, "Documentation of Nonroad Mobile Source Emission Inventory Improvements." This appendix documents the nonroad mobile source inventory updates since the last approved ROP SIP.

With regard to calculation of target level of reductions (Tables 4-6 and 4-7 of the Appendix), EPA commented that Line 4-6a carries forward as the previous target level 222.06 tpd. EPA commented that this is not the previous target, but, rather, the 1990 base year inventory. The previous target must be the adjusted inventory- the 15% reduction - the RACT fix up or 171.22 tpd.

The table format has been updated to clarify the flow of values from the base year starting value to the final ROP target. Although the percent reduction is calculated using the ROP adjusted base year, the reductions are subtracted from the actual base year inventory. For this SIP update to the 1-hour ROP, TCEQ and EPA agreed that the 1999 milestone year would be used as the first analysis year. Normally, this would mean that the previous target for 1999 would be the target value from the 1996 15% milestone year. However, since this ROP SIP includes an update to all the inventory years, including the base year, we could not use the existing 15% target value. Instead, the 1999 milestone calculations take into account all the 1996 and 1999 reduction requirements. The 15% VOC, RACT fix-ups, and I/M correction (not needed for BPA) as well as the 9% 1996 to 1999 reduction requirement, the non-creditable fleet turnover between 1990 and 1996, and the non-

creditable fleet turnover between 1996 and 1999 are all taken into account in the 1999 milestone analysis.

EPA commented that Line 4-7a (same reference as above comment) similarly carries forward the previous target as 299.49 tpd, which is the base year inventory. EPA stated that the previous target instead must be the 1996 adjusted inventory, or 295.77 tpd.

The table in question has been updated to provide more clarity. However, the calculation for 1999 can start with the 1990 base year and account for all 1996 and 1999 reduction requirements. This table reflects that all required ROP reductions have been taken into account.

EPA commented that it is not clear how TCEQ developed the area sources' ROP emission inventories. TCEQ states on page 2-5 that there are no rules affecting area sources, and that uncontrolled growth and emissions calculations are therefore not required. However, EPA stated there are rules for area sources, e.g., printing, degreasing solvents, house paints, leaking underground storage tanks.

The ROP SIP document has been updated to include the effects of area source controls. The ROP calculations were updated to include controlled and uncontrolled area source values as appropriate. Area sources were forecast using EPA-approved EGAS growth factors. Controlled and uncontrolled values were developed using rule effectiveness factors for appropriate categories. Additional text has been added to the ROP SIP document discussing the methodology used for growth projections and control calculations.

EPA commented that on pages 2-6 and 2-4, respectively, the TCEQ states that it updated the future year inventories for controlled growth, and that the "DFW 2000" methodology was used for calculating future uncontrolled growth and emissions from point sources. EPA stated that documentation must be provided describing how this methodology was applied in the case of the BPA area.

The calculation methodologies used are described in "Appendix U, Point Source Growth Rates for HGA, BPA, and DFW SIP Modeling, 3/22/00, Richard Karp Dallas/FortWorth Attainment Demonstration, April 2000 Revision." This was the survey based method used to estimate growth for stationary sources in the above referenced areas.

Sierra-Lone Star commented that they have a major concern about the underlying accuracy of the emissions inventory for BPA, particularly for the VOCs from major point sources. The specific concern is that there are likely to be large volumes of unreported VOCs and highly reactive VOCs (HRVOC) such as flares, cooling towers, process vents, fugitives, and other plant areas. Numerous BPA area major point sources are known to be significant emitters of HRVOC due to the large number of oil refineries and chemical/petrochemical plants in the three county region. While the TCEQ collects EI questionnaires from all major point sources for all emissions generating units and emission points, significant errors are occurring in the emission estimates provided by the plants because they lack adequate actual monitoring data of actual emissions from flares, cooling towers, process vents, fugitives and other plant areas.

Sierra-Lone Star also commented that recent aerial monitoring flyovers in 2003 and 2004 of BPA industrial plants support the fact that the current BPA EI does not reflect actual emissions of all VOCs and HRVOCs from major point sources by several orders of magnitude. This results in the overall BPA emissions summary containing significant errors in the VOC budget.

Sierra-Lone Star also commented that they have another concern over the accuracy of the 2000 VOC figure of 68 TPD from BPA's many major point sources, a figure which is probably significantly higher.

In the Houston area, HRVOCs were observed in the aerial flyovers at 6-12 times higher than the EI reported levels used in the smog modeling. Smog-forming and toxic gases were "consistently" measured at levels three to 10 times greater – and in some cases "100 or more [times] greater" – than local oil refineries and chemical plants reported releasing, according to a recent analysis of the Houston findings by federal, state and academic experts. The 2000 study of Houston's air quality scientifically revealed for the first time that operators of petrochemical plants and refineries in the city's vast industrial complex had been significantly underestimating for years emissions of VOCs in required annual EI reports to TCEQ. The point is that the HRVOCs in the BPA region could easily [be] as high as Houston's - 6-12 times or higher - than the 2000 EI summary suggests. TCEQ does not even state how significant the errors are in the VOC inventory but clearly the error is not small.

Sierra-Lone Star commented that in Chapter 2, Section 2.8 Emissions Summary (p 23), the 2000 BPA EI Summary shows 68 tons per day for major point sources and the 2007 projects precisely 68 TPY for the same major point sources. The contention is that the 68 TPD estimate is a serious error of under-reporting by industry in the BPA EI due to the failure to require industry to properly monitor, properly calculate and thereby include all VOCs and HRVOCs that are not being accounted for in the BPA EI.

The commission is confident that the process of quality assuring the emissions inventory information required by 30 TAC 101.10 to verify that approved emission factors and techniques have been applied and submitted by the regulated community to the agency results in an accurate accounting of emissions reported. The commission is also aware that the science studies of the last several years indicated that more highly reactive volatile organic compound emissions are being emitted into the atmosphere than can be accounted for in the inventory for the HGB area. Sufficient evidence does not currently exist to support extending this conclusion to other volatile organic compounds or other industrialized areas such as BPA. In the years since the 2000 studies were conducted and conclusions drawn, the commission has strengthened the level of detail required to be reported by the regulated community for cooling towers, equipment fugitive emissions, and flares for all sites subject to the inventory requirements, regardless of where they occur in Texas. The commission has also increased focus on emissions from emissions events, startup, maintenance and shutdown events since that time. Specific emissions inventory reporting guidelines have included source specific reporting criteria for each of these three source categories since the calendar year 2002 reporting year. The purpose of the Rate of Progress SIPs is to assure that emissions reductions are steadily progressing towards the attainment deadlines of the CAA based on a "base year inventory." The commission believes that the requirements for creating the base year inventory have been met. The present SIP revision does comply with the requirements and intent of the Rate-of-Progress requirements of the CAA, and will help assure that progress is steadily made toward attainment.

EPA commented that the plan provides little documentation of how the projected emission reductions were calculated. EPA stated that it is not sufficient to lump "Federal, State, Local Point Source Controls, NOx RACT, HON, Pulp and Paper, RFG Tanks," etc. into one emission reduction estimate. EPA stated that the reduction from each measure should be delineated and supported. EPA further commented that some of the reductions, such as RFG and I/M which don't apply in Beaumont, don't seem to be appropriate for Beaumont.

The inclusion in the list of controls of RFG and I/M was a typographical error. This error has been corrected. A new appendix has been created which provides a separate listing for each identified control strategy. Rate of progress SIPs are typically developed and adopted prior to ROP milestone years occurring and thus are estimating emissions reductions for all milestone years

which are in the future. This revision is unique in that there exists actual point source emissions inventories for each year up through and including 2002. In this ROP, we have utilized this information to depict actual progress for the milestone years as opposed to projected progress on an individual control program by control program basis the years through 2002. In doing so, we utilized rule effectiveness (RE) adjusted inventories that depict actual reductions achieved in practice through 2002, not just projected reductions. Rule effectiveness adjusted inventories are necessary since the ROP projections from a 1990 base year are projected from RE adjusted base year inventories. Rule effectiveness adjustments to the point source inventory were applied to each source in accordance with methods previously approved into the SIP. Values for these RE adjusted and non-RE adjusted inventories can be seen in Appendix 1 Sheet 13. Control programs for post 2002 are identified in the document.

EPA stated that it seems unlikely that the changes to the VOC inventory can be explained by corrections to company questionnaires or improved methodologies. In any case because of the substantial nature of the change it needs to be further explained.

The 1990 VOC value reflected in the table for point source was not adjusted for Rule Effectiveness (RE) nor correctly transcribed into the table. The table entitled: "Data Entry Sheet 1of 3: 1996-2005 ROP Target Level Emissions" now correctly reflects the RE adjusted number of 245.54 tpd for VOC. TCEQ staff also reviewed the NOx value for that same table and concluded that the 218.18 tpd contained in the proposal was based on annual average tpd rather than ozone season. The corrected ozone season NOx value is 221.01 tpd, which is consistent with the "Fix-ups to the 15% Rate of Progress SIP" adopted July 24, 1996.

EPA commented that to date it has approved approximately 75 tpd of VOC emission reductions as part of the 15% plan. However, the proposed plan projects more than double this amount of emission reduction off of an inventory that is 30% smaller. EPA commented that the State must provide documentation of the control measures that will achieve this goal. EPA further commented that by 1999 74.34 tpd of NOx reductions are projected, by 2002 these grow to 96 tpd, but by 2002 the reductions shrink to 83 tpd. The discussion in the plan refers to NOx RACT by 1999, lean-burn engine controls by 2001, Phase I controls by 2003, and Phase II controls by 2005 so a steadily increasing amount of reduction seems appropriate.

The TCEQ in the proposed ROP SIP used standard methods for both inventory development and emission reduction estimates from control technologies. Many changes have occurred since some of the inventory elements were developed for use in previous ROP SIPs. Among the changes are the release of the EPA MOBILE6 and NONROAD models, the availability of new activity data for some source categories, the availability of actual point source inventories for the ROP milestone years that have passed, and the availability of updated inventory and control reduction calculation methodologies developed by or in consultation with EPA. The new emission factor models have a significant effect on emission estimates and control strategy reductions. The development of the onroad mobile emission inventory and control strategy reductions are documented in Appendix 2 of the SIP. TCEQ has added Appendix 6 and 7 documenting the changes and updates to the nonroad and area source inventories since the last approved ROP SIP. Previously control strategy reductions for point sources relied upon using assumptions and future projection of rule effectiveness and rule penetration. Since the last approved ROP SIP, three milestone year inventories for point sources have been completed. These actual inventories, once adjusted for rule effectiveness, can be used to determine definitively the amount and progress of control strategy reductions for 1996, 1999 and 2002 for point sources. These actual inventories do not rely upon projection and expected control program reductions, rather they represent an accounting of the actual implementation of the control technologies based upon survey information submitted to the

TCEQ by all point sources.